

61

17. (NEW) A method of imaging in which a de-convolution process is applied to the image-domain results of the object-scan to derive therefrom the respective point- or line-spread function of at least one object-discontinuity, and to derive from said function the location in the image domain of the respective discontinuity, wherein the de-convolution process is carried out using sub-pixel sampling.

18. (NEW) The method according to claim 17, wherein the location of the respective discontinuity is derived from the mid-point of the full-width half-maximum of the function.

19. (NEW) The method according to claim 17, wherein the function is correlated with the image-domain results of the transfer for enhancement of spatial resolution of the imaging of the respective discontinuity.

20. (NEW) The method according to claim 19, wherein the enhancement of spatial resolution of the imaging of the respective discontinuity involves transfer of sub-pixels within the image-domain results of the respective discontinuity, the sub-pixels being transferred within their respective image-domain results from one side to the other of the location for edge-image definition.

21. (NEW) The method according to claim 17, wherein the de-convolution process is carried out using least-squares running filtering.

22. (NEW) The method according to claim 17, wherein an edge-contour of the object is defined in the image domain using de-convolution processing as aforesaid.

23. (NEW) The method according to claim 22, wherein the area of the object-image within the edge-contour is determined.

24. (NEW) The method according to claim 22, wherein the volume of the object-image within the edge-contour is determined.

25. (NEW) The method according to claim 22, wherein the object-scan is a magnetic resonance (MR) scan, values of relaxation times T_1 and T_2 are derived for the object-image within said contour, and these values are used to identify from stored data, types of material involved in the scanned object.

26. (NEW) The method according to claim 25, wherein density values for the identified material types are derived from further stored data.

27. (NEW) The method of imaging according to claim 17, wherein corresponding computed tomography (CT) and magnetic resonance (MR) scans of the same part of an object are derived, the scans are related to one another for correlation of one to the other positionally with respect to said part using the de-convolution process, and imaging of said part of the object is provided in accordance with the MR scan as modified spatially in dependence upon the CT contrast numbers applicable to the corresponding, correlated positions of the CT scan.

28. (NEW) The method according to claim 27, wherein geometric correction is applied to the imaging derived from the MR scan, in accordance with stored data.

29. (NEW) An imaging system comprising mechanism for performing a de-convolution process on the image-domain results of an object-scan to derive therefrom the respective point- or line-spread function of at least one object-discontinuity, and mechanism to derive from the function the location in the image domain of the respective discontinuity, wherein the de-convolution process is carried out using sub-pixel sampling.

30. (NEW) The system according to claim 29, wherein the location of the respective discontinuity is derived from the mid-point of the full-width half-maximum of the function.

31. (NEW) The system according to claim 29, wherein the function is correlated with the image-domain results of the transfer for enhancement of spatial resolution of the imaging of the respective discontinuity.

Al
end.

THE UNIVERSITY OF CHICAGO